

Texas Water Development Board



WATER Conditions

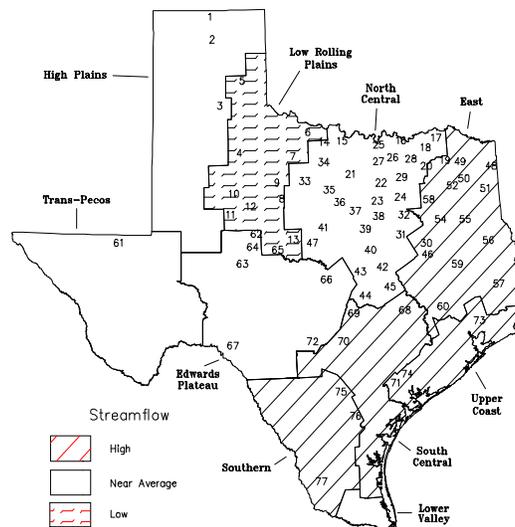
RESERVOIR STORAGE

December 1998

Near the end of December, the 77 reservoirs monitored for this report held 28,314,000 acre-feet in conservation storage. This is 82 percent of the conservation storage capacity of the State's major reservoirs. Compared to the end of November, storage increased 842,000 acre-feet (+2%). Compared to this month last year, storage decreased 1,088,000 acre-feet (-3%).

Of the monitored reservoirs, 29 held 100 percent or more of conservation storage near the end of December. Conservation storage increased or remained nearly the same in all regions of the state except for the High Plains, where storage dropped by 7,630 acre-feet (1%). Among all regions, conservation storage in the Trans-Pecos was lowest at 22%, followed by the Low Rolling Plains at 33% and the Southern region at 36%. Conservation storage in the South Central and Upper Coast regions remained at 100%.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



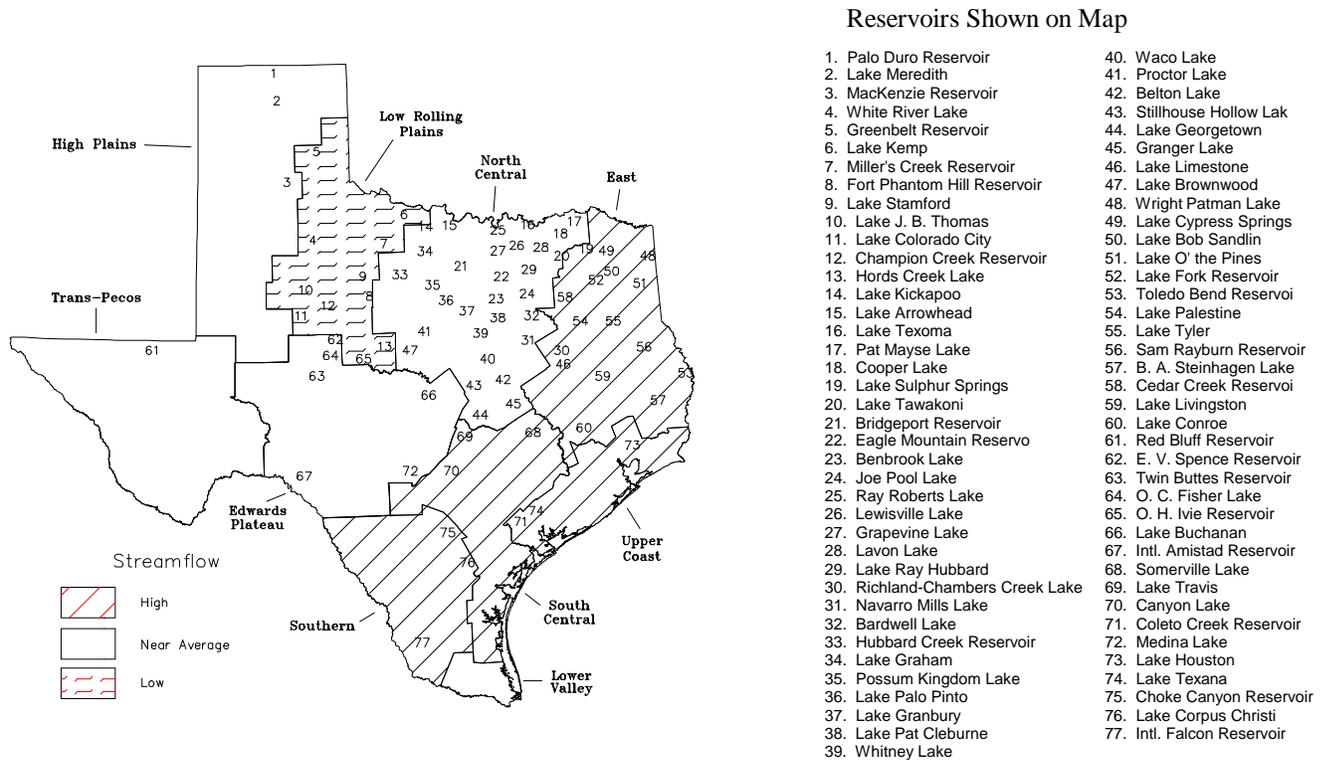
Current data are based on elevation near end of month at 77 reservoirs that represent 98 percent of total conservation storage capacity in Texas reservoirs having a capacity of 5,000 acre-feet or more.

STREAMFLOW

Streamflow conditions across Texas in December were generally high on the central and upper Texas coastal regions, near normal in west and central Texas, and below normal in north central Texas and the Low Rolling Plains. The following is a summary of the measured flows reported at 29 index stations across the State.

High flows persisted along the Gulf Coast and East Texas following November's heavy rainfalls. The highest flows during December were recorded in East Texas at Denton Creek near Justin where the recorded flows are exceeded only 4% of the time, and at Village Creek near Kountze, where recorded flows are exceeded 7% of the time. Twelve of thirteen monitoring stations in the East Texas, Upper Coast, South Central, and Southern regions recorded flows exceeded only 25% of the time. Four of eight sites in the North Central, Edwards Plateau, and Trans-Pecos regions recorded normal flows, with three sites on the southeast recording high flows, and one site on the western North Central region recording low flows. Three of four sites in the Low Rolling Plains recorded low flows, and two of three sites in the High Plains were near normal.

STREAMFLOW CONDITIONS FOR DECEMBER COMPARED WITH PAST RECORD



CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation	Conservation		Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late Dec 1998 (acre-feet)	(%)	Late Nov 1998 (acre-feet)	(%)	Late Dec 1997 (acre-feet)	(%)	
HIGH PLAINS									
Palo Duro Reservoir	1	60,900	10,379	17	-1,589	-3	2,759	5	
Lake Meredith (Texas)	2	500,000	333,500	67	-5,500	-1	-50,270	-10	
Lake Meredith (Texas and Oklahoma)	(2)	779,560	333,500	43	-5,500	-1	-50,270	-6	
MacKenzie Reservoir	3	46,250	6,977	15	-311	-1	-1,483	-3	
White River Lake	4	31,850	8,764	28	-230	-1	-4,106	-13	
TOTAL		639,000	359,620	56	-7,630	-1	-53,100	-8	
LOW ROLLING PLAINS									
Greenbelt Reservoir	5	58,200	25,130	43	-110	0	-2,380	-4	
Lake Kemp	6	319,600	145,700	46	-1,900	-1	-101,840	-32	
Miller's Creek Reservoir	7	27,890	14,284	51	-1	0	2,644	9	
Fort Phantom Hill Reservoir	8	70,030	25,917	37	-202	0	-34,373	-49	
Lake Stamford	9	52,700	18,798	36	-538	-1	-10,402	-20	
Lake J. B. Thomas	10	202,300	6,972	3	187	0	-9,608	-5	
Lake Colorado City	11	30,800	15,130	49	-390	-1	-4,670	-15	
Champion Creek Reservoir	12	41,600	10,500	25	-110	0	-9,600	-23	
Hords Creek Lake	13	8,600	5,133	60	-161	-2	-1,527	-18	
TOTAL		811,720	267,564	33	-3,225	0	-171,756	-21	
NORTH CENTRAL									
Lake Kickapoo	14	106,000	52,235	49	-1,092	-1	-5,895	-6	
Lake Arrowhead	15	262,100	173,100	66	-2,300	-1	-31,870	-12	
Lake Texoma	16	2,722,300	2,247,048	83	28,822	1	-475,252	-17	
Pat Mayse Lake	17	124,500	119,746	96	15,197	12	-4,754	-4	
Cooper Lake	18	273,000	273,000	100	0	0	0	0	
Lake Sulphur Springs	19	17,710	15,466	87	548	3	-2,244	-13	
Lake Tawakoni	20	936,200	936,200	100	0	0	0	0	
Bridgeport Reservoir	21	374,830	286,247	76	1,975	1	-49,753	-13	
Eagle Mountain Reservoir	22	178,380	146,442	82	-78	0	-22,918	-13	
Benbrook Lake	23	88,200	80,091	91	7,498	9	-8,109	-9	
Joe Pool Lake	24	175,800	175,800	100	11,865	7	0	0	
Ray Roberts Lake	25	798,760	715,781	90	2,964	0	-55,069	-7	
Lewisville Lake	26	555,000	462,262	83	25,985	5	-78,988	-14	
Grapevine Lake	27	187,700	153,772	82	4,198	2	-19,648	-10	
Levon Lake	28	443,800	434,514	98	124,302	28	-9,286	-2	
Lake Ray Hubbard	29	490,000	486,500	99	39,849	8	-3,500	-1	
Richland-Chambers Creek Lake	30	1,103,820	1,103,820	100	0	0	0	0	
Navarro Mills Lake	31	55,810	55,810	100	0	0	0	0	
Bardwell Lake	32	53,580	53,580	100	0	0	0	0	
Hubbard Creek Reservoir	33	317,800	253,800	80	-4,700	-1	-39,200	-12	
Lake Graham	34	45,000	39,270	87	-370	-1	-5,730	-13	
Possum Kingdom Lake	35	551,820	246,405	45	-139,895	-25	-225,995	-41	
Lake Palo Pinto	36	42,200	26,151	62	-986	-2	-8,749	-21	
Lake Granbury	37	135,680	130,293	96	-1,407	-1	-5,387	-4	
Lake Pat Cleburne	38	25,300	25,300	100	2,437	10	1,100	4	
Whitney Lake	39	622,800	471,837	76	25,921	4	-55,243	-9	
Waco Lake	40	144,500	144,500	100	0	0	-50	0	
Proctor Lake	41	55,590	33,927	61	-362	-1	-14,873	-27	
Belton Lake	42	434,500	434,500	100	0	0	0	0	
Stillhouse Hollow Lake	43	226,060	226,060	100	0	0	30	0	
Lake Georgetown	44	37,010	37,010	100	0	0	20	0	
Granger Lake	45	54,280	54,280	100	0	0	0	0	
Lake Limestone	46	215,750	215,750	100	0	0	4,240	2	
Lake Brownwood	47	143,400	113,213	79	-790	-1	-11,987	-8	
TOTAL		11,999,180	10,423,710	87	139,581	1	-1,129,110	-9	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

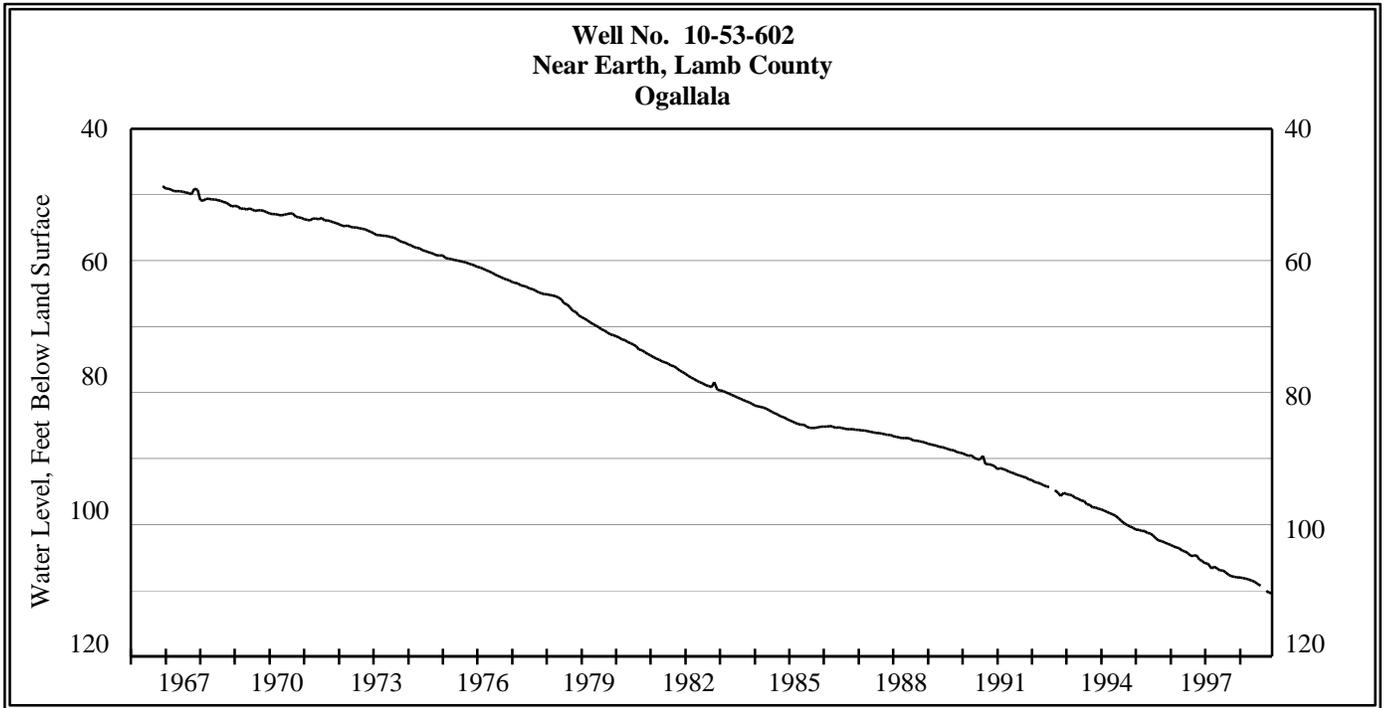
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Dec 1998		Change since Late Nov 1998		Change since Late Dec 1997		
			(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)	
EAST									
Wright Patman Lake	48	142,700	142,700	100	0	0	0	0	
Lake Cypress Springs	49	66,800	66,800	100	0	0	0	0	
Lake Bob Sandlin	50	202,300	202,300	100	0	0	130	0	
Lake O' the Pines	51	252,000	252,000	100	0	0	0	0	
Lake Fork Reservoir	52	635,200	635,200	100	0	0	13,370	2	
Toledo Bend Reservoir	53	4,472,900	4,200,000	94	298,000	7	180,000	4	
Lake Palestine	54	411,300	411,300	100	0	0	0	0	
Lake Tyler	55	73,700	73,700	100	0	0	0	0	
Sam Rayburn Reservoir	56	2,876,300	2,876,300	100	404,166	14	0	0	
B. A. Steinhagen Lake	57	94,200	80,036	85	-14,164	-15	-2,594	-3	
Cedar Creek Reservoir	58	637,050	637,050	100	0	0	0	0	
Lake Livingston	59	1,750,000	1,735,000	99	-1,000	0	-15,000	-1	
Lake Conroe	60	429,900	416,200	97	-400	0	-770	0	
TOTAL		12,044,350	11,728,586	97	686,602	6	175,136	1	
TRANS-PECOS									
Red Bluff Reservoir	61	307,000	68,600	22	2,460	1	-23,910	-8	
TOTAL		307,000	68,600	22	2,460	1	-23,910	-8	
EDWARDS PLATEAU									
E. V. Spence Reservoir	62	484,800	73,990	15	-2,190	0	-51,010	-11	
Twin Buttes Reservoir	63	177,800	13,846	8	457	0	-29,664	-17	
O.C. Fisher Lake	64	119,200	12,981	11	-431	0	-3,249	-3	
O. H. Ivie Reservoir	65	554,340	428,200	77	-6,700	-1	-80,660	-15	
Lake Buchanan	66	896,980	808,454	90	6,026	1	-11,026	-1	
Amistad Reservoir (Texas)	67	1,771,030	962,000	54	39,000	2	64,540	4	
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	1,365,000	43	48,000	2	-120,220	-4	
TOTAL		4,004,150	2,299,471	57	36,162	1	-111,069	-3	
SOUTH CENTRAL									
Somerville Lake	68	155,060	155,060	100	0	0	0	0	
Lake Travis	69	1,144,100	1,144,100	100	0	0	46,830	4	
Canyon Lake	70	385,600	385,600	100	0	0	2,670	1	
Coletto Creek Reservoir	71	35,060	35,060	100	0	0	300	1	
Medina Lake	72	254,000	254,000	100	0	0	33,090	13	
TOTAL		1,973,820	1,973,820	100	0	0	82,890	4	
UPPER COAST									
Lake Houston	73	128,860	128,860	100	0	0	0	0	
Lake Texana	74	157,900	157,900	100	0	0	0	0	
TOTAL		286,760	286,760	100	0	0	0	0	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

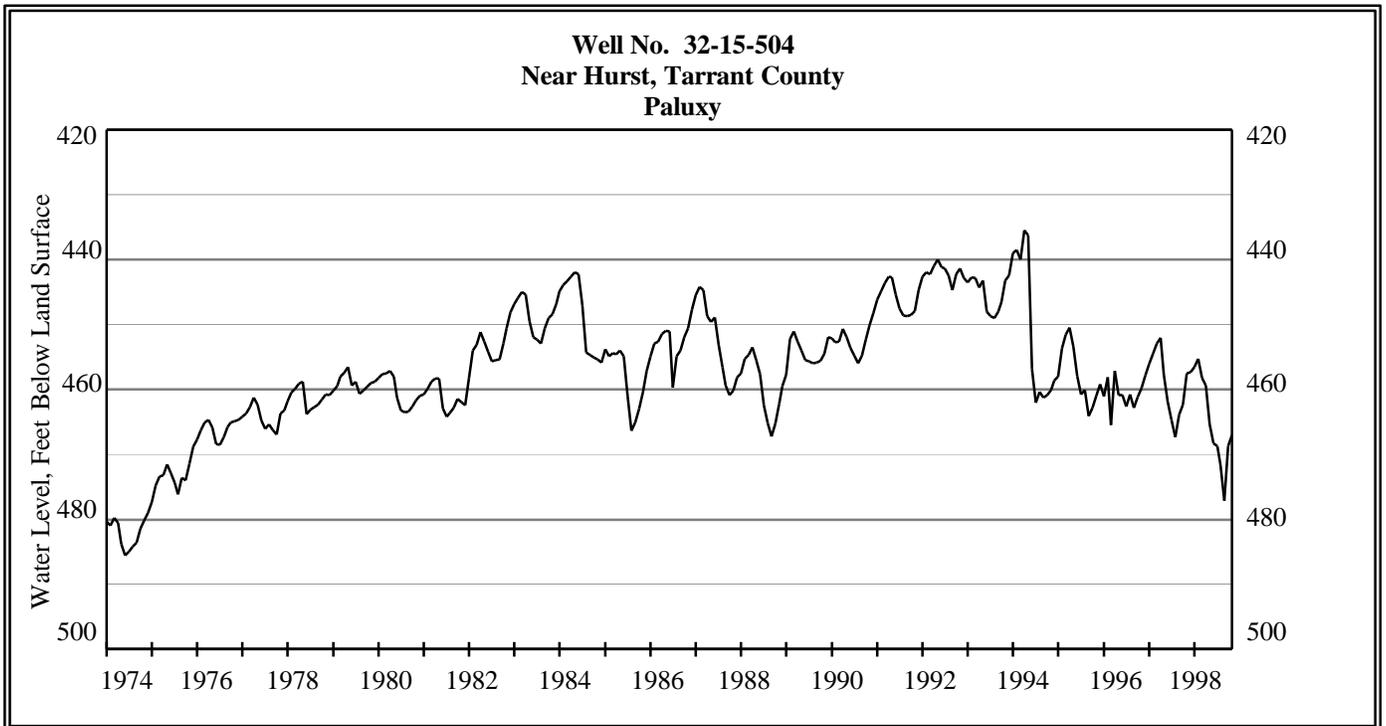
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Dec 1998 (acre-feet) (%)		Change since Late Nov 1998 (acre-feet) (%)		Change since Late Dec 1997 (acre-feet) (%)		
SOUTHERN									
Choke Canyon Reservoir	75	695,260	361,873	52	-2,471	0	86,873	12	
Lake Corpus Christi	76	241,240	186,263	77	0	0	16,253	7	
Falcon Reservoir (Texas)	77	1,555,120	358,000	23	-9,000	-1	40,200	3	
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	645,000	24	-11,000	0	88,040	3	
TOTAL		2,491,620	906,136	36	-11,471	0	143,326	6	
STATE TOTAL		34,557,600	28,314,267	82	842,479	2	-1,087,593	-3	

NOTES: Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level), or any water in so called dead storage (in the bottom of the reservoir, below the invert of lowest outlet works and consequently not removable by gravity flow alone.) Percentages are based on the conservation storage capacity of and the conservation storage in the reservoirs for date shown. Current data are based on elevations near end of month at 77 reservoirs that together represent 98 percent of the total conservation storage capacity of major Texas reservoirs (those with capacity of 5,000 acre-feet or more each). Figures in parentheses for Lake Meredith represent the total conservation storage excluding 58,014 acre-feet of dead storage and are not included in State total. Preliminary figures are shown for the United States' share of conservation storage in International Amistad and International Falcon Reservoirs; the estimates may be subject to revision on completion of international water accounting. Texas (United States' share) and Mexico and are not included in State total.

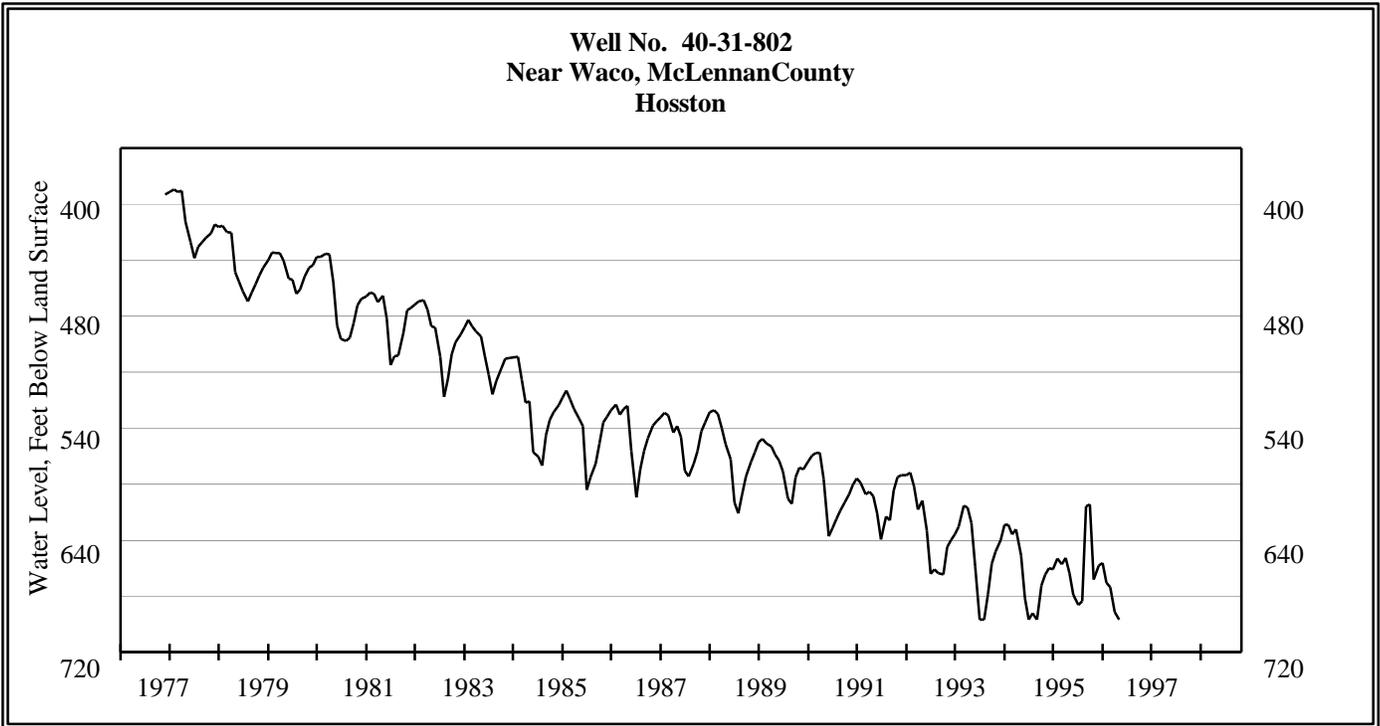
GROUND WATER LEVELS IN OBSERVATION WELLS



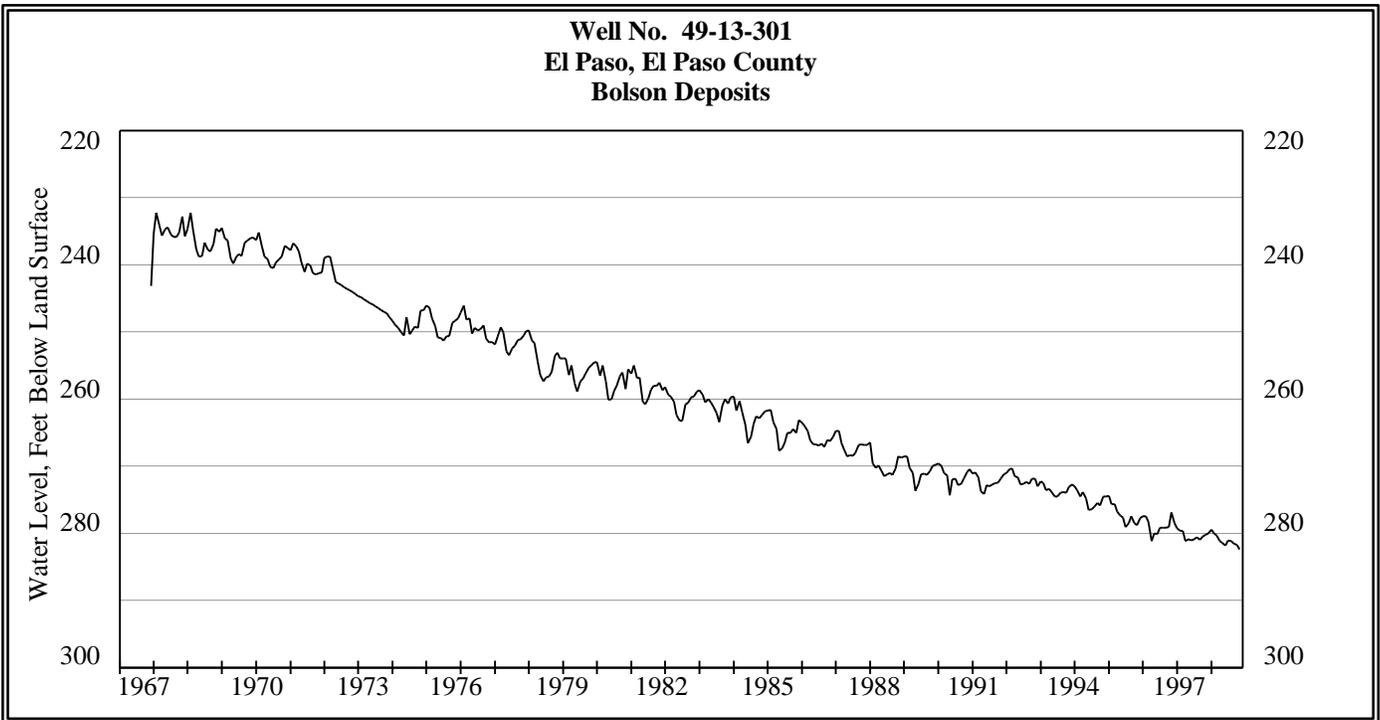
The December water-level measurement in this Ogallala aquifer well, elevation 3667 feet above sea level, was 110.47 feet below land surface. This was 0.11 of a foot below last month's measurement, 2.53 feet below last year's measurement, and 82.32 feet below the initial measurement recorded in 1950.



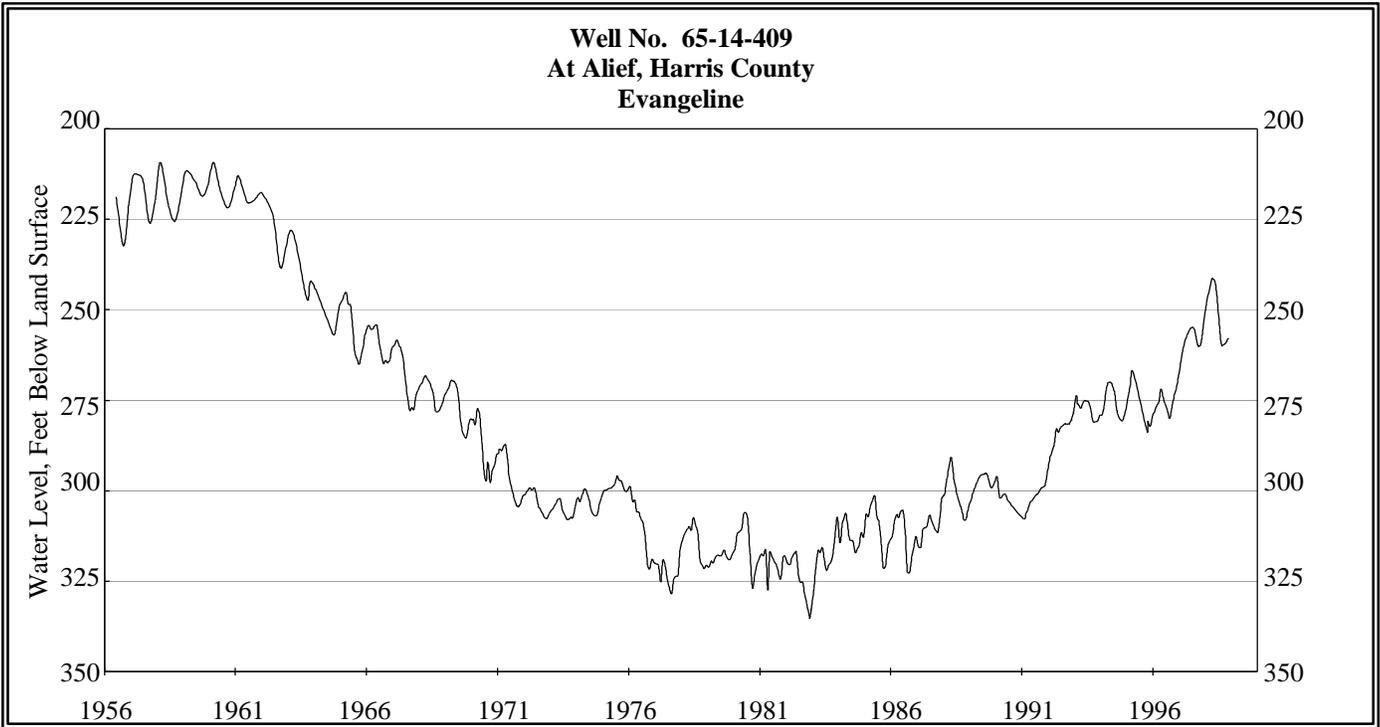
The December water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was 467.00 feet below land surface. This measurement was 1.72 feet above last month's measurement, 9.52 feet below last year's measurement, and 73.61 feet below the initial measurement recorded in 1953.



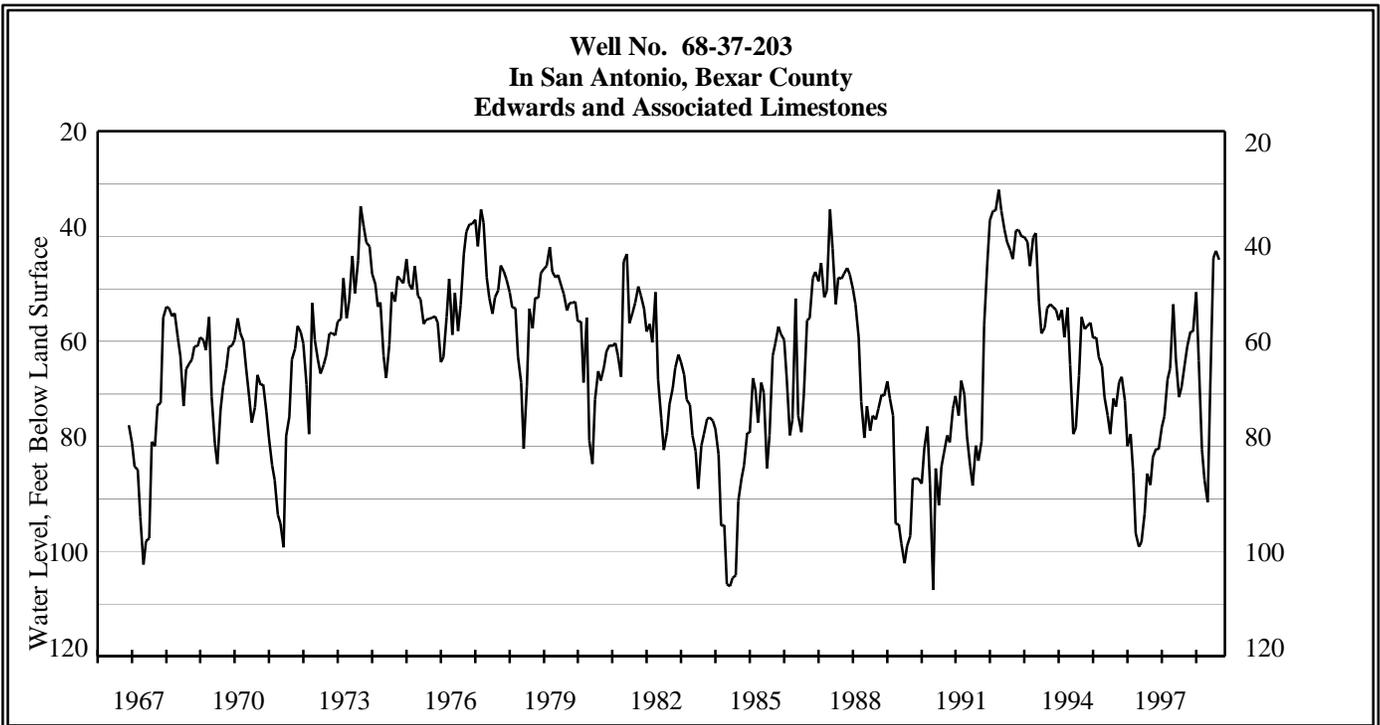
The December water-level measurement in this Hosston Formation aquifer well, elevation 593 feet above sea level, was not available this month due to continued casing problems.



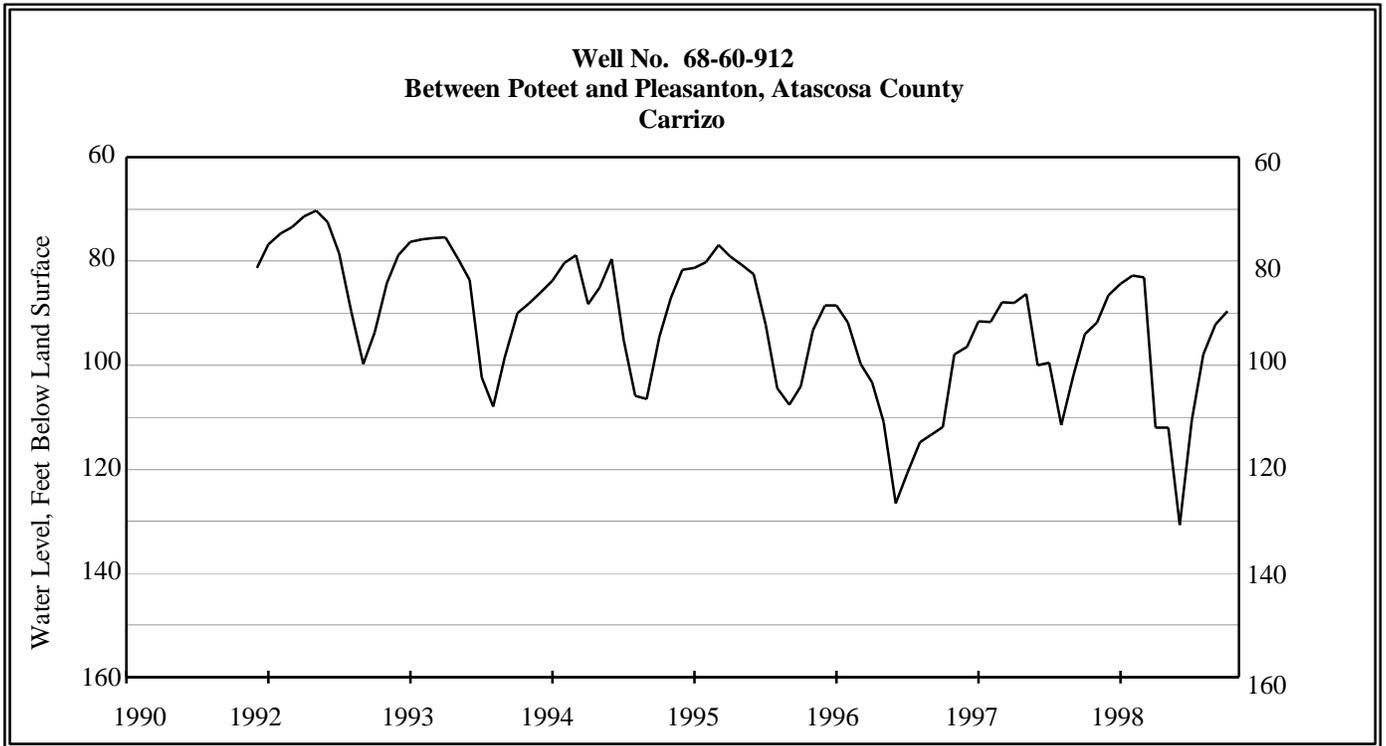
The December water-level measurement in this Bolson Deposits aquifer well, elevation 3882 feet above sea level, was 282.40 feet below land surface. This was 0.64 of a foot below last month's measurement, 1.87 feet below last year's measurement, and 50.50 feet below the initial measurement recorded in 1964.



The December water-level measurement in this Evangeline aquifer well # 65-14-409 (incorrectly reported as 65-20-110 in previous newsletters), elevation 66 feet above sea level, was 257.12 feet below land surface. This was 0.67 of a foot above last month's measurement, 0.48 of a foot above last year's measurement, and 121.58 feet below the initial measurement recorded in 1947.

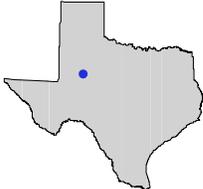


The December water-level measurement in this Edwards aquifer well, elevation 731 feet above sea level, was 44.5 feet below land surface. This was 1.8 feet below last month's measurement, 13.7 feet above last year's measurement, and 15.12 feet above the initial measurement recorded in 1962.



The December water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 89.53 feet below land surface. This was 2.66 feet above last month's measurement, 2.23 feet above last year's measurement, and 8.34 feet below the initial measurement recorded in 1992.

HYDROGRAPH OF THE MONTH



Each month this space features a new hydrograph (marked with the ● symbol on the map) depicting different aquifers and different conditions in Texas.

Well No. 27-39-903
Midland Well Field, Martin County

Water Level,
Feet Below Land Surface

This 182-foot deep Ogallala well, owned by the City of Midland, is at an elevation of 2,885 feet. Although currently unused, the City plans to begin using it for public water supply in the near future.

